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Title: In-Stream Tidal Power and a Threatened Canadian Striped Bass Population: Determining Potential for Interaction in Minas Passage, Bay of Fundy

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Category: Environment

The status and composition of the Bay of Fundy (BoF) striped bass population is currently debated and generally not well understood. Of three former spawning stocks contributing to this population, only one extant stock, the Shubenacadie-Stewiacke River, remains reproductively active. Renewed interest in harnessing tidal energy from the Minas Passage, Bay of Fundy, with in-stream tidal turbines, will present an unknown risk to striped bass and other fish species which utilize this key migration pathway. The objective of this study was to investigate movement patterns and depth preferences of striped bass within Minas Passage and in direct proximity of an in-stream tidal power turbine. During 2010 a total of 80 striped bass (43 adults and 37 juveniles) were implanted with VEMCO V13-P pressure sensor acoustic transmitters. Twenty two (22) moored acoustic receiver stations, positioned in two primary array groupings within Minas Passage, were used to detect movements of implanted bass throughout the summer and fall. Overall survival of fish post-tagging was very high (>98%), and distinct differences in habitat use and depth utilization were observed between adults and juveniles. A large proportion of tagged adult striped bass, 40 (93%), were detected within the Minas Passage, whereas only 12 (32%) of tagged juveniles were detected within the same area. Of those bass detected within the Minas Passage, 52% of adults and 33% of juvenile striped bass were detected in the immediate area (within 500m) of the in-stream tidal turbine. Seasonal, circadian, and tidal/lunar cycle movement patterns will be presented and related to body size and sex.